

In the Claims:

Cancel without prejudice all the claims (Claims 1-20) now pending, and substitute therefor the following new Claims 21 - 40:

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Claims

What is claimed is:

21. In a unidirectional or broadcasting communication system using OFDM transmission from a base station to subscriber units, means for achieving a bi-directional channel comprising:

A. transmitting means in the subscriber units for a transmission of signals that are orthogonal to the signals transmitted from the base station and are also orthogonal to signals from other subscriber units; and

B. receiving means in the base station for reception of said orthogonal signals, and

wherein said subscriber units further include means for adapting a frequency of a clock used for transmission therefrom to frequency deviations of a signal from the base station, and (for transmitting at a corrected frequency whose value is responsive to a frequency deviation, so that the signals received at the base have a frequency corrected for that deviation.)

22. The communication system according to claim 21, wherein the transmitting means in the subscriber include means for the transmission of the orthogonal signals using TD, TDD or FDD methods.

23. The communication system according to claim 21, wherein the base station and the subscriber units operate according to a DVB-T standard.

24. The communication system according to claim 21, wherein the base station and the subscriber units further include equalizing means and pulse shaping means for reducing effects of multipath.

25. The communication system according to claim 21, wherein the signals transmitted from the base station include a guard time interval, and wherein the signals transmitted to the base station are synchronous with the guard time interval.

26. The communication system according to claim 21, further including signal shaping means in the receiver of the base station or in the receiver of the subscriber unit for an application of a window in time to signals received therein.

27. The communication system according to claim 21, further including signal shaping means in the transmitter of the base station or in the transmitter of the subscriber for an application of a window in time to signals transmitted therefrom.

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28. The communication system according to claim 21, wherein said base station further includes means for the transmission of Automatic Synchronization Control (ASC) signals to said subscriber units, and wherein said subscriber units further include means for synchronizing transmissions therefrom responsive to said received ASC signals.

29. The communication system according to claim 21, wherein said base station further includes means for the transmission of Automatic Power Control (APC) signals to said subscriber units, and wherein said subscriber units further include means for controlling the power of transmissions therefrom responsive to said received APC signals.

30. The communication system according to claim 21, wherein the base station further transmits a pilot signal and wherein each subscriber unit further includes means for generating the transmit signal having a frequency responsive to the frequency of the pilot signal.

31. In a unidirectional or broadcasting communication system using OFDM transmission from a base station to subscriber units, means for achieving a bi-directional channel comprising:

A. transmitting means in the subscriber units for a transmission of signals that are orthogonal to the signals transmitted from the base station and are also orthogonal to signals from other subscriber units; and

B. receiving means in the base station for reception of said orthogonal signals, and wherein the OFDM decoding means comprise an FFT processor operating on an input channel and a transversal filter means that reduces a pulse widening because of a window in the transmitting means.

32. The communication system according to claim 31, wherein the transmitting means in the subscriber include means for the transmission of the orthogonal signals using TD, TDD or FDD methods.

33. The communication system according to claim 31, wherein the base station and the subscriber units operate according to a DVB-T standard.

34. The communication system according to claim 31, wherein the base station and the subscriber units further include equalizing means and pulse shaping means for reducing effects of multipath.

35. The communication system according to claim 31, wherein the signals transmitted from the base station include a guard time interval, and wherein the signals transmitted to the base station are synchronous with the guard time interval.

36. The communication system according to claim 31, further including signal shaping means in the receiver of the base station or in the receiver of the subscriber unit for an application of a window in time to signals received therein.

37. The communication system according to claim 31, further including signal shaping means in the transmitter of the base station or in the transmitter of the subscriber for an application of a window in time to signals transmitted therefrom.

38. The communication system according to claim 31, wherein said base station further includes means for the transmission of Automatic Synchronization Control (ASC) signals to said subscriber units, and wherein said subscriber units further include means for synchronizing transmissions therefrom responsive to said received ASC signals.

A/
Unit